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(54) **A lifting and supporting aid**

(57) The present invention provides a belt (10) that, in use, is attachable around the midriff of a person's body and can be used as an aid to lift or support the person, the belt (10) including:

fastening means (13) that releasably fasten the belt (10) around the person's midriff;  
handle means (11A, 11B) that when gripped by a third party can aid with the lifting and support of the person;  
means (14A, 14B, 14C, 14D; 14A', 14B', 14C', 14D') for receiving at least one first strap (30, 31) member such that the belt can be converted into a harness

which is connectable to a first lifting or support apparatus (40) that can lift or support the person from above; and

connecting means (15) that, in use, are connectable to a support member that can support a further portion of the person's body and/or to at least one second strap member which is attachable to a second lifting or support apparatus that can lift or support the person from the side.

**Description**

[0001] The present invention relates to a lifting and supporting aid. In particular, the present invention relates to a lifting and supporting aid that, in use, is attachable to the body of a person and can aid with lifting or manoeuvring of such person from one location or position to another, and with supporting such person. More particularly, the present invention relates to a belt that, in use, is attachable around the waist or midriff of a person and can aid with lifting or manoeuvring such person from one location or position to another, and with supporting such person.

[0002] Many types of slings and harnesses have been developed to aid with the lifting or manoeuvring or supporting of persons who have lost the function of their legs.

[0003] The size and shape of such slings and harnesses vary depending on the specific function of the sling and harness. For example, slings that are utilised to aid with the lifting of a person onto a toilet, referred to in the art as toileting slings, generally include a portion that is attachable to a hoist or lifting apparatus that lifts the person from above, a portion that supports the person's back, a portion that supports the person's thighs and is provided with an aperture in the region of the person's posterior, whereas a full weight bearing sling utilised to support a person in a sitting position, generally includes a portion that is attachable to a hoist or lifting apparatus that lifts the person from above and a portion that resembles a hammock within which the person sits.

[0004] As will be appreciated by those utilising such slings and harnesses, for example, care workers, a problem associated with known slings and harnesses is that same have to be constantly changed depending on the required use of the sling or harness. For example, if a person who has lost the function of his/her legs is in bed and requires the use of a toilet, the care worker will need to locate the person within a first type of sling so that the person may be lifted into a wheelchair, such sling will then need to be removed, so that the person can be located within a second type of sling suitable to manoeuvre or lift the person onto and from the toilet.

[0005] Additionally, it will be appreciated that the provision of different types of slings and harnesses for different applications is costly.

[0006] According to the present invention there is provided a belt as specified by claim 1.

[0007] It is believed that a belt in accordance with the present invention overcomes the problems associated with known slings and harnesses outlined above. In particular, and as a belt in accordance with the present invention can be used alone as a transfer belt and support belt and can be converted into a sling used for standing up and sitting down, into a toileting sling, into a harness that is attachable to a lifting or support apparatus and into a fully functional patient sling, it is believed that same has more utility and dispenses with the need of

having to utilise a different type of sling or harness for each application.

[0008] In a further aspect of the present invention there is provided a kit including a belt in accordance with the present invention, the kit including: at least one first strap member;

a support strap;

a seat providing member;

at least one second strap member; and

means that can effect connection between the connecting means of the belt and the support strap, seat providing member and second strap member.

[0009] A non-limiting embodiment of the present invention will now be described by way of example and with reference to the accompanying drawings in which:

Figure 1 is a side view of a belt in accordance with the present invention;

Figure 2 is a side view of the belt of Figure 1 when attached to the midriff of a person;

Figures 3A -3C are side views of the belt of Figure 1 illustrating the manner in which the harness straps are connected to the belt of Figure 1 thereby converting the belt into a harness;

Figures 4A-4D is a side view of the belt of Figure 1 when located around a person's midriff illustrating the manner in which the harness straps are connected to the belt of Figure 1 thereby converting the belt into a harness;

Figure 5 is a view from behind of a person wearing the belt of Figure 1 when converted to a harness and provided with an additional support strap; and Figure 6 illustrates some of the accessories that are connectable to the belt of Figure 1.

[0010] As illustrated, a belt 10, which is substantially rectangular in shape, in accordance with the present invention can be fitted around the midriff of a person 50.

[0011] The belt 10 includes a central strap 11 that is attached thereto. The central strap 11 includes two raised portions that form handles 11A and 11B at either end of the belt 10. In use, such handles 11A and 11B can be gripped by a third party to lift or support a person 50. Additionally, the central strap 11 provides a central loop 11C.

[0012] The belt 10 further includes fastening means in the form of a plurality of buckles 13. Each buckle 13 includes a male portion 13A and a female portion 13B located at either end of the belt 10. Each male portion 13A being releasably retained within its respective female 13B counterpart. Both the male 13A and female 13B portions of each buckle 13 are connected to the belt 10 via a strap 13C, the ends of which protrude at either end of the belt 10. In a preferred embodiment, each strap 13C runs along the length of the belt 13C and is sewn to the inside of the belt 10. The positioning of each

male portion 13A along its respective strap 13C can be varied, such that the tightness of the belt 10 around the person's midriff can be adjusted. This has the advantage in that when the belt 10 is not being used to lift or support a person 50, rather than removing same, same can be untightened so that same is not uncomfortable to the person 50. It will be appreciated that this is less time consuming than having to constantly remove and replace the belt 10 as and when same is needed. Additionally, it will be appreciated that as the belt 10 includes an upper and lower buckle 13 i.e. one buckle 13 located above the other, the belt 10 can be fitted snugly around the person's 50 midriff, that is, even in the event that the person 50 has a bulging stomach. It is to be understood that the belt 10 may include a single buckle.

[0013] The belt 10 further includes a pair of loops 14A and 14A', 14B and 14B', 14C and 14C', 14D and 14D' located at corresponding locations along the length of the belt 10. Loops 14A and 14A' are located opposite one another on the upper side of each end of the belt 10. Loops 14B and 14B' are located opposite one another on the lower side of each end of the belt 10. Loops 14C and 14C' are located adjacent the end of the belt 10, and loops 14D and 14D' are located just off the centre X of the belt 10. Each set of loops 14A, 14B, 14C, 14D and 14A', 14B', 14C', 14D' are adapted to receive a single strap 30, 31, which when fed through the sets of loops 14A, 14B, 14C, 14D and 14A', 14B', 14C', 14D' converts the belt 10 into a harness that is attachable to a lifting or support apparatus 40, for example, the spreader bar of a hoist, that can lift or support a person from above.

[0014] As illustrated in Figures 3A-3C and Figs. 4A-D, in order to convert the belt 10, which is located around the midriff of a person 50, into a harness that is attachable to a lifting or support apparatus 40, a first strap 30 is fed through loop 14A, then diagonally across the front of the belt 10 through loop 14B and then through loops 14C, 15 and 14D. On exiting loop 14D, the first strap 30 is then fed over and under central loop 11C, provided by central strap 11. A second strap 31 is then fed through loop 14A', then diagonally across the front of the belt 10 through loop 14B', and then through loops 14C', 15 and 14D'. On exiting loop 14D', the second strap 31 is then fed over and under central loop 11C, provided by central strap 11. Before connecting each end of the first and second straps 30, 31 to the lifting or support apparatus 40, it is checked to ensure that each end of the straps 30, 31 are of the same length. One advantage of the straps 30, 31 being received by the belt 10 in this manner is that the straps 30, 31 are self-adjusting such that in the event that a person falls they will automatically tighten thereby preventing further injury to the person 50. Additionally, and as each strap 30, 31 criss-crosses the other at the front and back of the belt 10, they will not catch on the person's neck or face in the event of a fall.

[0015] The belt 10 is further provided with a second

pair of loops 15, at either end thereof. Each loop 15 is connectable to a support member that can support a further portion of the person's body, for example, a support strap 16 or seat providing member 17 and/or to at least one second strap member 18, which is attachable to a second lifting or support apparatus that can lift or support the person 50 from the side.

[0016] As illustrated in Figure 5, a support strap 16 is connectable between the loops 15, via a karabiner 19, preferably a karabiner of the type that includes a screw gate. The support strap 16 is locatable behind the upper thighs of the person 50, such that in the event that the person 50 falls, the support strap 16 can be placed under the person's thighs, thereby supporting the person until such time that they can be lifted to safety. It will be appreciated that when the belt 10 in accordance with the present invention is converted to a harness as outlined above and is further provided with a support strap 16, then same can be used to manoeuvre a person onto and from a toilet i.e. same can be converted into a toileting sling.

[0017] In order to convert the belt 10, which has been converted into a harness as outlined above, into a fully functional patient sling, a seat providing member 17 is connected between the loops 15 via karabiners 19, preferably of the type including a screw gate. Preferably, and for comfort, the seat portion 17A is fully padded and made of a soft stay dry polyester material, which is preferably non-abrasive, and filled with a vinyl (PVC) padding material.

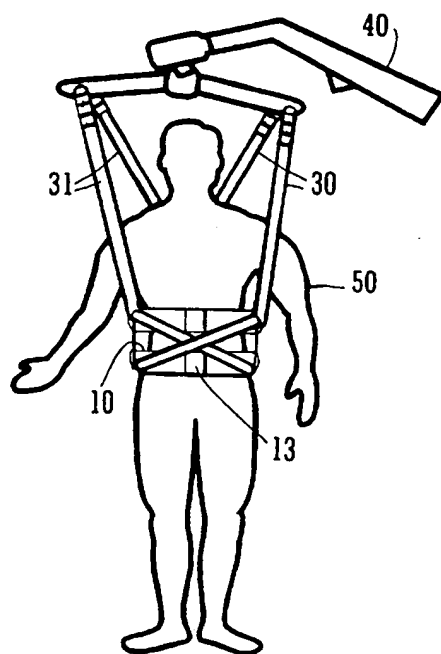
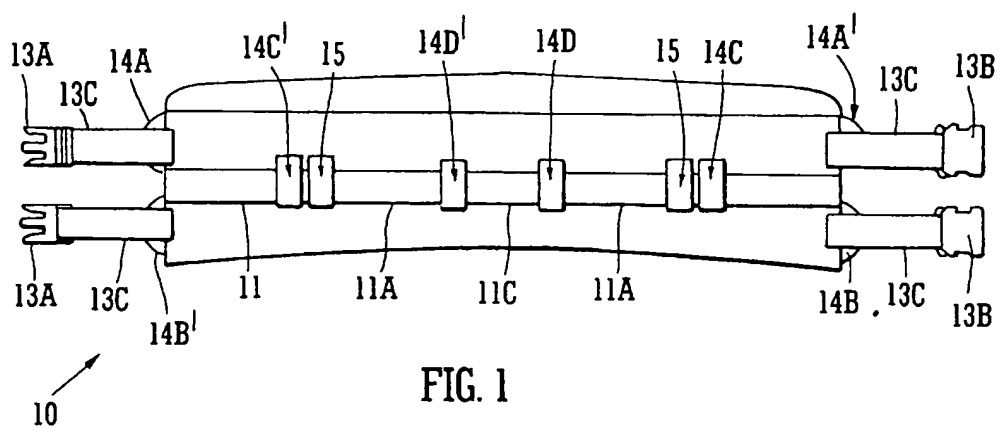
[0018] In order to convert the belt 10 so that it can be attached to a standing up patient lifter that can lift and/or support the person 50 from the side, for example, of the type utilised to assist a person 50 in getting out of a chair, each loop 15 is connected via a karabiner 19, preferably of the screw gate type, to a second strap member 18. In order to increase the person's 50 safety, a support strap 16 may also be attached between the karabiners 19, such that in the event that the person 50 falls, same can be located under the person's thighs, thereby supporting the person until the person can be lifted to safety. When the belt 10 is attached to a standing up patient lifter, which can lift and/or support a person 50 from the side, it will be appreciated that same can aid with lifting a person onto and from a toilet and/or seat.

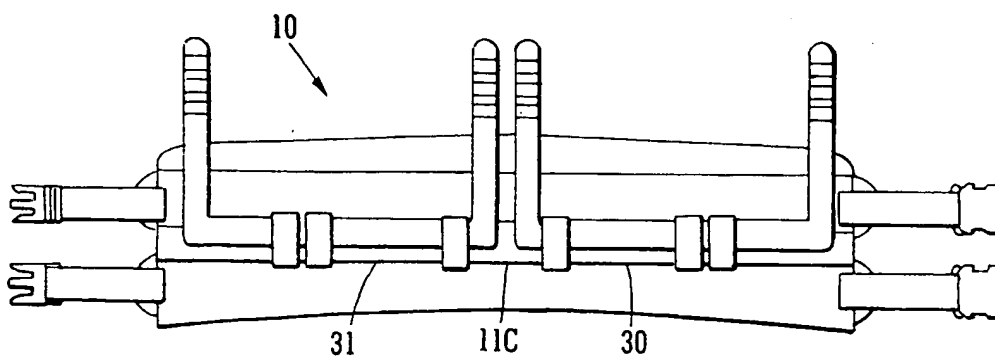
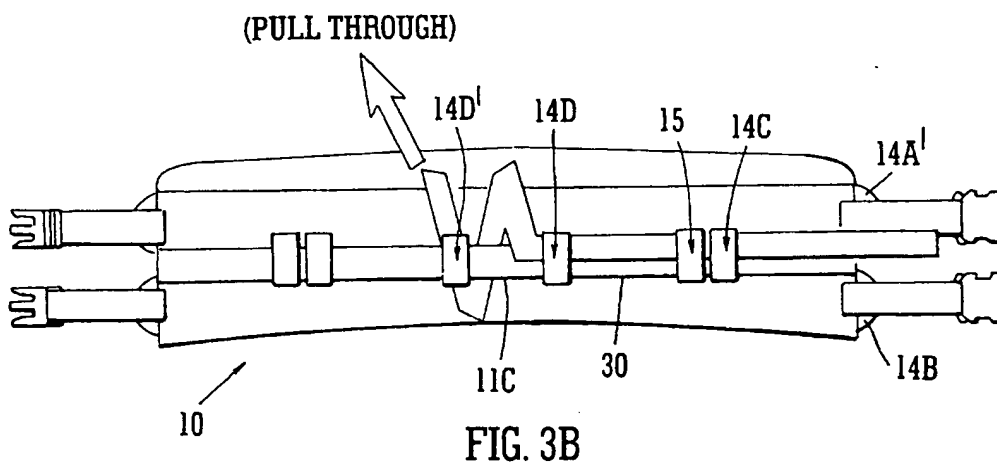
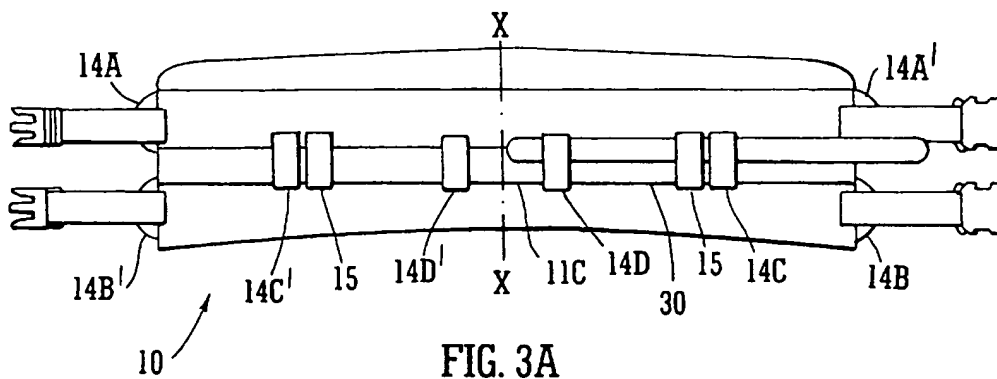
#### Claims

1. A belt (10) that, in use, is attachable around the midriff of a person's body and can be used as an aid to lift or support the person, the belt (10) including:

fastening means (13) that releasably fasten the belt (10) around the person's midriff;  
handle means (11A, 11B) that when gripped by a third party can aid with the lifting and support of the person;

- means (14A, 14B, 14C, 14D; 14A', 14B', 14C', 14D') for receiving at least one first strap member (30; 31) such that the belt (10) can be converted into a harness which is connectable to a first lifting or support apparatus (40) that can lift or support the person from above; and connecting means (15) that, in use, are connectable to a support member that can support a further portion of the person's body and/or to at least one second strap member (18) which is attachable to a second lifting or support apparatus that can lift or support the person from the side.
2. A belt (10) as claimed in claim 1, wherein the fastening means (13) are adjustable such that tightness of the belt around the person's midriff is adjustable.
  3. A belt as claimed in claim 1 or 2, wherein the belt (10) is provided with two pairs of fastening means (13A, 13B), an upper pair and a lower pair, such that the belt can be fastened snugly around the midriff of the person.
  4. A belt as claimed in claim 1, 2 or 3, wherein the fastening means (13) includes at least one buckle including a female portion (13B) which is connected to one end of the belt and a male portion (13A) which is connected to the other end of the belt (10), the male portion (13A) being releasably retained within the female portion (13B).
  5. A belt (10) as claimed in any one of the preceding claims, wherein a surface of the belt adjacent the person's midriff includes a portion that includes a non-slip or partially non-slip material.
  6. A belt (10) as claimed in claim 5, wherein the non-slip material is a fleece material.
  7. A belt (10) as claimed in any one of the preceding claims, wherein the handle means include a first handle (11A) and a second handle (11B) located at opposite ends of the belt (10).
  8. A belt (10) as claimed in claim 7, wherein the handles (11A, 11B) are provided by a central strap (11) running along the length of the belt (10).
  9. A belt (10) as claimed in any one of the preceding claims, wherein the connecting means include a pair of loop members (15) located at either end of the belt (10).
  10. A belt (10) as claimed in claim 9, wherein the loop members (15) are connected to the support member that can support a further portion of the person's body and/or to the at least one second strap member (18) which is attachable to a second lifting or support apparatus that can lift or support the person from the side via a karabiner (19).
  11. A belt (10) as claimed in claim 10, wherein the karabiner (19) is of the type that includes a screw gate.
  12. A belt (10) as claimed in any one of the preceding claims, wherein the means for receiving the at least one first strap member such that the belt can be converted into a harness includes two sets of loop members (14A, 14B, 14C, 14D; 14A', 14B', 14C', 14D') located opposite one another at either ends of the belt (10), each set of which is adapted to receive a single first strap member (30, 31).
  13. A kit including a belt as claimed in any one of the preceding claims, the kit further including:
    - at least one first strap member (30, 31);
    - a support strap (16);
    - a seat providing member (17);
    - at least one second strap member (18); and
    - means (19) that can effect connection between the connecting means of the belt and the support strap, seat providing member and second strap member.
  14. A kit as claimed in claim 13, wherein the means that can effect connection between the connecting means of the belt and the support strap, seat providing member and second strap member include at least one karabiner (19).
  15. A kit as claimed in claim 14, wherein the at least one karabiner is of the type that includes a screw gate.





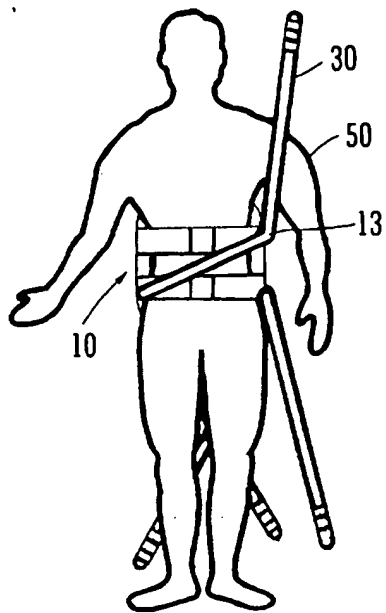


FIG. 4A

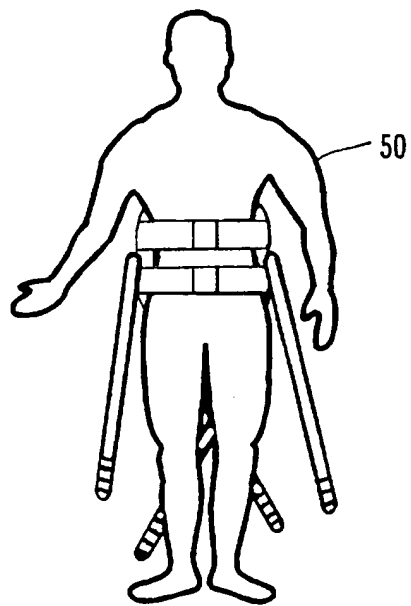


FIG. 4B

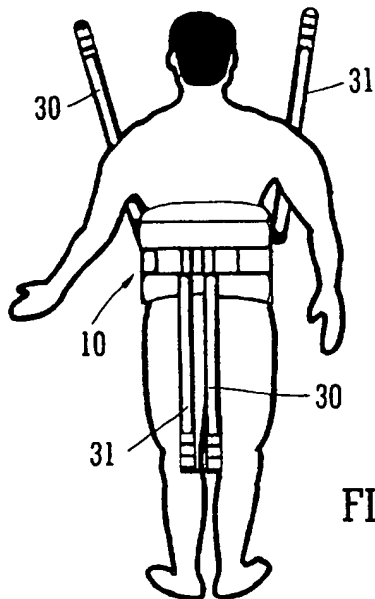
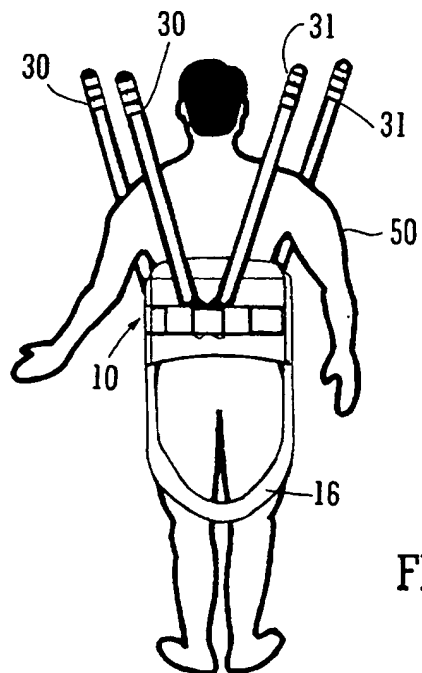
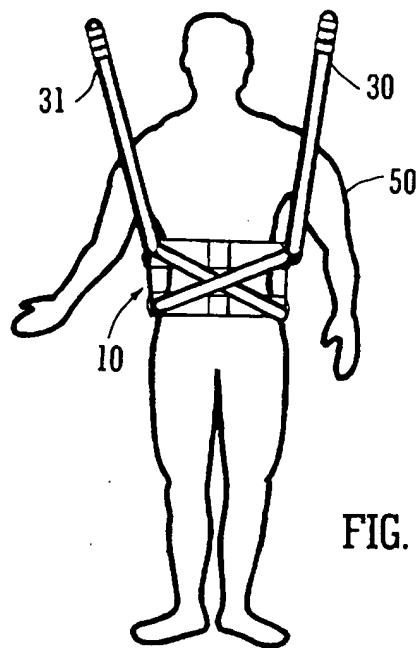


FIG. 4C





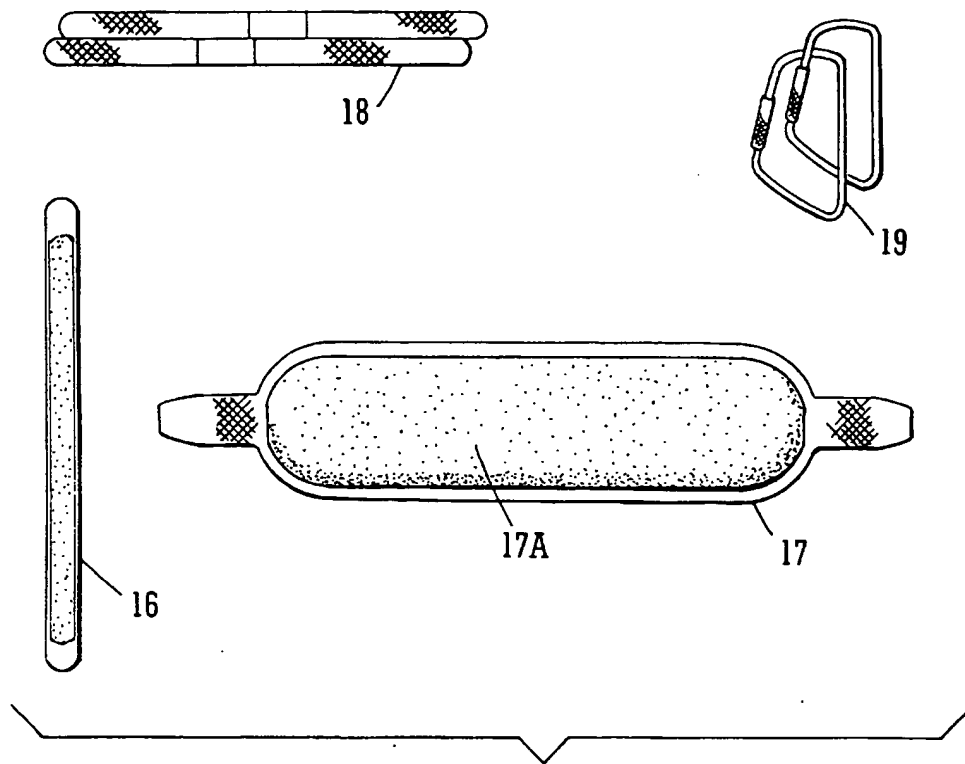


FIG. 6